WETLAND DELINEATION REPORT
AND
WETLAND MITIGATION PLAN

For

NORTHERN LEOPARD FROG
HABITAT ENHANCEMENT PROJECT

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EXECUTIVE SUMMARY

Ecological Land Services, Inc. (ELS) has completed a wetland delineation and wetland mitigation plan for the Washington Department of Fish and Wildlife (WDFW) for the proposed enhancement of Northern Leopard Frog (*Rana pipiens*) habitat, agreed upon as off-site mitigation for Kunze Farm Investments Company's residential subdivision, Sun Terrace, located in Moses Lake, Washington. WDFW will be solely responsible for the implementation of this mitigation plan. The project site is located south of South Frontage Road and Interstate 90, west of Moses Lake within Section 1, Township 18 North, Range 27 East; Section 36, Township 19 North, Range 27 East; and Section 31, Township 19 North, Range 28, east of the Willamette Meridian in Grant County, Washington (Appendix A, Sheets 1 and 2).

The Northern leopard frog (NLF) is listed as a state endangered species and as a federal species of concern. WDFW is proposing to enhance habitat for the state-endangered NLF within the NLF Management Area (NLFMA) on the Columbia Basin Wildlife Area, which contains the only known breeding population in the state of Washington. Habitat enhancement will include constructing 26 berms to isolate individual bodies of water by eliminating surface water connection. Isolation of breeding ponds will allow or assist in the removal and/or control of predatory fish and bullfrogs, both of which are detrimental to NLF reproduction and survival. The proposed berm construction will impact 2.09 acres of Category II wetlands within Units A and B of the NLFMA. Habitat enhancement will also include excavation of upland areas adjacent to existing wetlands to increase the area of suitable shallow-water breeding habitat. This habitat creation will produce 1.51 acres of Category II wetlands that will also serve as mitigation for the wetland impacts.

The goal of this proposed project is to provide habitat enhancement for the NLF through berm construction to reduce predation and wetland creation to increase breeding habitat. The goal of the proposed mitigation plan is to address the impacts to on-site wetlands due to the berm construction.

Table 1. Summary of Impacts and Proposed Mitigation.

IMPACT			
Type	**Description**	**Location**	**Area**
Direct Wetland	Construction of berms to reduce predatory threats to NLF	Category II wetlands within Units A and B	2.09 acres
MITIGATION			
Method	**Description**	**Ratio**	**Area**
Wetland Creation	Creation of additional NLF breeding habitat adjacent to Category II wetlands within Units A and B	0.72:1	1.51 acres

INTRODUCTION

Ecological Land Services, Inc. (ELS) has completed a wetland delineation and wetland mitigation plan for the Washington Department of Fish and Wildlife (WDFW) for the proposed enhancement of Northern Leopard Frog (*Rana pipiens*) habitat, agreed upon as off-site mitigation for Kunze Farm Investments Company's residential subdivision, Sun Terrace, located in Moses Lake, Washington. The Northern leopard frog (NLF) is listed as a state endangered species and as a federal species of concern. WDFW is proposing to enhance habitat for the state-endangered NLF within the NLF Management Area (NLFMA), which contains the only known breeding population in the state of Washington. Habitat enhancement will include constructing berms to isolate individual bodies of water by eliminating surface water connection and excavation of upland areas adjacent to existing wetlands to increase the area of suitable shallow-water breeding habitat. Isolation of breeding ponds will allow or assist in the removal and/or control of predatory fish and bullfrogs, both of which are detrimental to NLF reproduction and survival.

The project site is located west of Moses Lake within Section 1, Township 18 North, Range 27 East; Section 36, Township 19 North, Range 27 East; and Section 31, Township 19 North, Range 28, east of the Willamette Meridian, in Grant County, Washington (Sheet 1). The site totals approximately 560 acres within three parcels, identified by Grant County as numbers 161605000, 161300000, and 170862000. The property is located south of South Frontage Road and Interstate 90, west of Moses Lake (Appendix A, Sheet 2). The project site consists of federal land owned by the Bureau of Reclamation (BOR) and state land owned by Washington Department of Natural Resources (DNR) and managed by WDFW. As the site encompasses federal and state property as well as jurisdictional wetlands, the proposed project is under the jurisdiction of U.S. Army Corps of Engineers (USACE), WDFW, and Washington Department of Ecology (WDOE).

WETLAND DELINEATION REPORT

METHODOLOGY

Wetlands in the project area were delineated by ELS using the Routine Determination Method according to the U.S. Army Corps of Engineers, *Wetland Delineation Manual (1987)* and the *Washington State Wetlands Identification and Delineation Manual* (1997). The Routine Determination Method examines three parameters: vegetation, hydrology, and soils to determine if wetlands exist in a given area. It is the presence of hydrology that is critical in determining what qualifies as a wetland. However, since hydrologic conditions can change periodically (hourly, daily, or seasonally), it is necessary to determine if hydrophytic vegetation and hydric soils exist that would indicate water is present for a long enough duration to support a wetland plant community. By definition, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are regulated as "Waters of the United States" by the USACE and "Waters of the State" by WDOE.

The project site was divided into two separate site units, Unit A located to the east and Unit B located to the west (Appendix A, Sheet 2). Enhancement of NLF habitat will include creation or repair of 14 berms and 6 wetland creation areas within Unit A and 12 berms and 7 wetland creation areas within Unit B. The berms will allow or assist in the elimination and/or control of detrimental predation of NLF and the additional wetland creation areas will increase NLF habitat areas on-site.

ELS evaluated the proposed locations of the berms and wetland creation as indicated by WDFW in 15 study areas located within Units A and B for jurisdictional wetlands on November 27 and 28, 2007. This report summarizes the findings of the wetland delineation (Appendix A, Sheets 8 - 11). Wetland boundaries within the vicinity of specific areas were determined through breaks in topography, changes in vegetation, and evidence of surface or subsurface hydrology and were delineated on-site with fluorescent pin flags. The delineation pin flags were subsequently mapped using global positioning system (GPS) by ELS staff. Vegetation, soil, and hydrology data were collected from twenty-two (22) test plots to verify the presence or absence of wetlands (Appendix B).

EXISTING SITE CONDITIONS

The project site is located south of South Frontage Road and Interstate 90, west of the City of Moses Lake, and is separated into two separate units, A (approximately 230 acres) to the east and B (approximately 330 acres) to the west. The units consist of relatively undisturbed desert habitat with no existing structures and one dirt road accessing Unit B from the west. The project site is open to the public for recreational purposes (primarily wildlife-related including hunting and fishing). ELS observed evidence of hunting within both units, though more extensively within Unit A. Both units are located within the Columbia Basin Wildlife Area and are portions of the NLFMA. Unit A consists of rolling topography containing wetlands in the lower elevations with upland hummocks of varying size throughout the site. Unit B consists of slightly undulating topography with lower elevations in the central areas, containing wetlands with upland hummocks, and higher elevations in the western and eastern areas characterized as upland. There have been 44 and 23 ponds of varying size identified within Units A and B, respectively. The number, size, and volume of ponds in the NLFMA are quite dynamic due to annual and seasonal variations in the hydrology of the area. Vegetation within both units is dominated by emergent species though both units contain scattered tree groupings throughout the site.

EXISTING SOILS

The Natural Resources Conservation Service (NRCS) designates soils within Units A and B as Burbank loamy fine sand, 0-5% slopes (26), Qunicy fine sand, 2-15% slopes (97), Wanser-Quincy fine sands, 0-5% slopes (176), and Winchester sand, 2-5% slopes (186) (Sheet 3).

Burbank loamy fine sand, 0-5% slopes (26) is described as a very deep, excessively drained soil occurring on terraces. Quincy fine sand, 2-15% slopes (97) is described as a very deep, somewhat excessively drained soil occurring on dunes and terraces. Wanser-Quincy fine sand, 0-

5% slopes (176) is described as a very deep, poorly drained soil occurring on dunes and terraces. Winchester sand, 2-5% slopes (186) is described as a very deep, excessively drained soil occurring on hummocky terraces.

Wanser-Quincy fine sand, 0-5% slopes (176) is considered by NRCS to be hydric. NRCS soil series data and mapping practices are based on general regional soil characteristics and may not accurately display variations in the local soil properties. The presence or absence of hydric soil does not conclude an area as wetland or upland. Along with hydric soils, hydrology and wetland vegetation must also be present to determine an area as jurisdictional wetland. Due to localized, micro-variations in topography and hydrology, wetlands may be found in areas where hydric soils have not been mapped by the soil survey.

Observations by ELS in test plots throughout the project site generally agreed with the NRCS mapping. Wetland areas were found to contain hydric, poorly drained, sandy soils and upland areas were found to contain somewhat excessively drained sandy soils.

EXISTING HYDROLOGY

There are 67 permanent, semi-permanent, seasonally, or temporarily inundated areas, including fish bearing and non-fish bearing water bodies, identified within the project site (Appendix A, Sheets 6 and 7). ELS delineated wetlands within 12 wetland study areas in the vicinity of the berms and wetland creation areas associated with the NLF habitat enhancement project (Table 2; Appendix A, Sheets 8 - 11). Hydrology within the site is quite complex and is primarily influenced by ground water fluctuations.

EXISTING VEGETATION

Dominant vegetation on the upland and wetland test plots is documented on the attached data sheets (Appendix B). The indicator categories following the common and scientific names indicate the likelihood of a species to be found in wetlands. Listed from most-likely to least-likely to be found in wetlands, the indicator categories are:

- **OBL** (obligate wetland) - almost always occurs (estimated probability >99%) in wetlands, under natural conditions.
- **FACW** (facultative wetland) - usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.
- **FAC** (facultative) - equally likely to occur in wetlands or non-wetlands (estimated probability
  34%-66%).
- **FACU** (facultative upland) - usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).
- **UPL** (obligate upland) - almost always occur (estimated probability >99%) in non-wetlands, under natural conditions.
- **NI** (no indicator) - insufficient data to assign to an indicator category.

- A plus sign (+) after the indicator-status category means that the plant is more likely to be adapted to wet conditions than the category indicated. A minus sign (-) means the plant is less likely to be adapted to wet conditions than the category indicated.

Vegetation within the upland areas of Units A and B consisted almost entirely of emergent species. Dominant vegetation in the upland test plots consisted of Douglas rabbitbrush (*Chrysothamnus viscidiflorus,* NI), gray rabbitbrush (*Chrysothamnus nauseosus*, NI), tumble mustard (*Sisymbrium altissimum,* FACU-), Bailey's buckwheat (*Eriogonum baileyi,* NI), and small tumbleweed (*Sisymbrium loeselii,* NI). Within ten upland test plots, there was a percentage of bare ground ranging from 10 to 100% with an average of 38%.

Dominant vegetation in the wetland test plots consisted of hardstem bulrush (*Schoenoplectus acutus,* OBL), cattail (*Typha latifolia,* OBL), reed canarygrass (*Phalaris arundinacea,* FACW), curly dock (*Rumex crispus,* FAC+), and narrowleaf willow (*Salix exigua,* OBL). Within one of the wetland test plots, bare ground was documented at 20%.

NATIONAL WETLAND INVENTORY

The National Wetland Inventory (NWI) map indicates multiple wetland areas associated with the identified ponds within the project site (Appendix A, Sheets 4 and 5). The mapped wetland areas within Unit A include large palustrine, unconsolidated bottom, semi-permanently flooded (PUBF) areas throughout the unit, medium palustrine, emergent, persistent, semi-permanently flooded (PEM1F) areas scattered within the southwestern and northeastern corners, and small palustrine, broad-leaved deciduous forest, seasonally flooded (PFO1C) areas along the eastern and southern unit boundaries. The mapped wetland areas within Unit B include large palustrine, unconsolidated bottom, semi-permanently flooded (PUBF) areas running from the northeastern corner of the unit to the southern boundary, small palustrine, scrub-shrub, broad-leaved deciduous, temporarily flooded (PSS1A) areas scattered throughout the unit, and small palustrine, unconsolidated shore/emergent, persistent, seasonally flooded (PUS/EMIC) areas in the central portions of the unit. National Wetlands Inventory maps are typically used to gather wetland information about a region; however, due to the large scale necessary for regional mapping, they are limited in accuracy for localized analyses. ELS field observations generally agreed with the NWI indicated presence of wetlands scattered throughout both Units A and B.

PRIORITY HABITATS AND SPECIES

The NLF has documented presence within existing wetlands on-site in Units A and B as reported by WDFW. The Columbia Basin Wildlife Area contains the only known population in the state of Washington. The NLF is listed as a state endangered species and as a federal species of concern.

WDFW Priority Habitat and Species Maps indicate that there are no known occurrences of other state or federally threatened or endangered listed species within Units A and B. However, two additional priority species were indicated within the Units including a nest of the state-monitored Swainson's hawk (*Buteo Swainsoni*) and large concentrations of game mule deer (*Odocoileus hemionus hemionus).*

The DNR Natural Heritage Program indicates that there are no known occurrences of listed plant species within the sections that Units A and B are located. No survey has been conducted at this time for listed plant species within the area. However, WDFW Range Specialist, Mel Asher, has provided information on the concern of the potential presence of Ute's ladies tresses (*Spiranthes diluvialis*) in the project area (Appendix D). In her opinion, "Its unlikely that appropriate *S. diluvialis* habitat occurs in the Westlake area of Potholes Wildlife Area, based on the late-successional status of most of these wetlands." Any possible survey efforts in the future should concentrate on early to mid-seral wetland habitat, including short-emergent or moist meadow habitat dominated by *Muhlenbergia* sp., spikerush, or Baltic rush.

CONCLUSIONS

WETLAND AREAS

ELS investigated seven and eight wetland study areas where the habitat enhancement will occur within Units A and B, respectively. Wetland boundaries were delineated within 12 of the 15 wetland study areas associated with the proposed enhancement of NLF habitat within the project site (Appendix A, Sheets 8 - 11; Table 2). Within Unit A, 14 berms and 6 wetland creation areas are proposed for a total of 5 wetland study areas delineated. Within Unit B, 12 berms and 5 wetland creation areas are proposed for a total of 7 wetland study areas delineated.

Table 2. Proposed Berms and Creation Areas within Wetland Study Areas

Unit A			
Wetland Study Area (WSA)	**Proposed Berms**	**Proposed Creation**	**Wetlands Present**
1	Berms 2a, 2b, and 3	No	No
2	Berms 4a and 4b	No	Yes
3	Berm 1	No	No
4	Berms 5, 6a, and 6b	No	Yes
5	Berm 7	Yes	Yes
6	Berms 8 and 9	Yes	Yes
7	Berms 10 and 11	Yes	Yes
Unit B			
1	Berm 1	No	Yes
2	Berm 2	No	Yes
3	Berms 3a and 3b	No	Yes
4	Berms 4, 5, 6, and 7	Yes	Yes
5	Berm 8	No	No
6	Berm 9	Yes	Yes
7	Berm 10	No	Yes
8	Berm 11	Yes	Yes

Based on functions using the *Washington State Wetlands Rating System for Eastern Washington* produced by WDOE, wetlands within Units A and B are rated as Category II wetlands (Appendix C). Due to similarities of the units, Units A and B were rated together on one wetland rating form.

Table 3. Summary of Wetlands.

Wetland	Category Based on Functions
Unit A Wetlands	II
Unit B Wetlands	II

WETLAND MITIGATION PLAN

PROJECT DESCRIPTION

PROJECT LOCATION

The proposed NLF habitat enhancement project site is located west of Moses Lake within three parcels, identified by Grant County as numbers 161605000, 161300000, and 170862000, within Section 1, Township 18 North, Range 27 East; Section 36, Township 19 North, Range 27 East; and Section 31, Township 19 North, Range 28, east of the Willamette Meridian in Grant County, Washington (Appendix A, Sheet 1). The property is located south of South Frontage Road and Interstate 90, west of Moses Lake (Sheet 2).

RESPONSIBLE PARTIES

The project site consists of federal land owned by the Bureau of Reclamation (BOR) and state land owned by Washington Department of Natural Resources (DNR) and managed by WDFW. WDFW will be responsible for funding and implementing the project.

PROJECT DESCRIPTION AND PROPOSED IMPACTS

The NLF is listed as a state endangered species and as a federal species of concern with the only known breeding population located within the NLFMA in the Columbia Basin Wildlife Area. WDFW is proposing to enhance existing NLF habitat within this area (Appendix A, Sheets 8 through 13). Currently, predation by freshwater fish and bullfrogs is a serious detriment to the NLF's reproduction and survival. Habitat enhancement proposed will include constructing berms from on-site upland soils to isolate individual water bodies by eliminating surface water connections. Isolation of breeding ponds will allow the removal and/or control of predatory fish and assist in controlling bullfrog predation. Enhancement will also include excavation of upland areas adjacent to existing wetlands to increase the area of suitable shallow-water breeding habitat.

The project is proposing the construction of 26 berms including 10 within uplands and 16 within 12 wetland study areas (Appendix A, Sheets 8 – 11, and 16). A total of 2.09 acres of Category II wetlands will be impacted due to berm construction.

The proposed habitat enhancement project includes the expansion of wetlands to provide additional breeding habitat for NLF. Fill used to construct the proposed berms will be taken from uplands adjacent to existing wetlands to create additional wetland and NLF habitat. This habitat creation will produce 1.51 acres of Category II wetlands that will also serve as mitigation for the wetland impacts due to berm construction (Appendix A, Sheets 12 and 13). The goal of

this proposed project is to provide habitat enhancement for the NLF through berm construction to reduce predation and wetland creation to increase breeding habitat. The goal of the proposed mitigation plan is to address the impacts to on-site wetlands due to the berm construction.

With the proposed habitat enhancement, there will be temporary impacts to the associated 150-foot buffers. Habitat creation and portions of berms will be located within areas of the existing buffers on-site. Therefore, these areas will retain their habitat functions as either upland berms or breeding habitat. In any case, wetland buffer impacts are considered temporary, as they will be self-mitigating due to the overall NLF habitat enhancement.

Table 4. Summary of Impacts and Proposed Mitigation.

IMPACT			
Type	**Description**	**Location**	**Area**
Direct Wetland	Construction of berms to reduce predatory threats to NLF	Category II wetlands within Units A and B	2.09 acres
MITIGATION			
Method	**Description**	**Ratio**	**Area**
Wetland Creation	Creation of additional NLF breeding habitat adjacent to Category II wetlands within Units A and B	0.72:1	1.51 acres

ALTERNATIVE ANALYSIS

The NLFMA within the WDFW Columbia Basin Wildlife Area is the only feasible location for the proposed project. The purpose of the project is to enhance existing NLF habitat and assist in controlling predation that is a serious threat to the reproduction and survival of the state-endangered species. NLF are only known in Grant County, Washington within only two areas of the Columbia Basin Wildlife Area including the Potholes Reservoir Unit and Gloyd Seep Unit, a small area adjacent to Crab Creek approximately 12 miles north of Moses Lake. The NLFMA currently contains the only known breeding population in the state. The alternative of creating new habitat areas and reintroducing NLF is not feasible at this time for WDFW and the focus of the species protection is to maintain and improve upon the existing successful populations before reintroduction can be achieved.

ECOLOGICAL ASSESSMENT OF IMPACT AREAS

EXISTING WETLAND SOILS

The Natural Resources Conservation Service (NRCS) designates soils within the wetlands on-site as Wanser-Quincy fine sand, 0-5% slopes (176) (Sheet 3). Wanser-Quincy fine sand, 0-5% slopes (176) is described as a very deep, poorly drained soil occurring on dunes and terraces and as hydric by NRCS.

EXISTING WETLAND HYDROLOGY

Wetlands within Units A and B contain an estimated 67 permanent, semi-permanent, seasonally, or temporarily inundated wetland areas. Hydrology within the site is quite complex and is primarily influenced by ground water fluctuations. The average annual precipitation in the area is under 10 inches; therefore, limiting the contribution of precipitation and runoff to wetland hydrology (NOAA 2000).

EXISTING WETLAND VEGETATION

Wetlands within Units A and B contain mostly monotypic emergent vegetation with the exception of scattered tree groupings within Unit A. The emergent vegetation within the wetlands are dominated mostly by hardstem bulrush (*Schoenoplectus acutus,* OBL) and cattail (*Typha latifolia,* OBL) with smaller quantities of dominant species including reed canarygrass (*Phalaris arundinacea*, FACW), curly dock (*Rumex crispus*, FAC+), and narrowleaf willow (*Salix exigua*, OBL).

EXISTING WETLAND FAUNA

The state-endangered Northern Leopard Frog has documented presence within wetlands existing on-site in Units A and B as reported by WDFW. The Columbia Basin Wildlife Area contains the only known NLF population in the state of Washington. No formal wildlife surveys were conducted by ELS for the property; however, evidence of beaver, coyote, and deer species were observed by ELS biologists during site visits. Additionally, with the high quality wildlife habitat contained in the wetland areas on-site, the presence of multiple fish, amphibian, reptile, avian, and small mammal species is assumed.

ECOLOGICAL ASSESSMENT OF MITIGATION AREAS

SOILS

Mitigation areas contain upland soils that are likely somewhat excessively drained. Excavation within the mitigation areas will remove much of the upland soil, altering topography and creating additional area of depressional wetlands. As the depressional wetlands experience seasonal inundation, hydric soils will likely develop in time.

HYDROLOGY

Mitigation areas consist entirely of uplands with no or little hydrology present throughout the year. Mitigation will create wetland areas adjacent to those existing within Units A and B and the primary source of hydrology will stem from groundwater controlled by BOR. Mitigation areas will be seasonally inundated providing additional breeding habitat for NLF.

VEGETATION

Vegetation consists almost entirely of upland emergent species dominated by Douglas rabbitbrush (*Chrysothamnus viscidiflorus*, NI), gray rabbitbrush (*Chrysothamnus nauseosus*, NI), tumble mustard (*Sisymbrium altissimum*, FACU-), Bailey's buckwheat (*Eriogonum baileyi*, NI), and small tumbleweed (*Sisymbrium loeselii,* NI). The presence of invasive species appeared to be limited through site observations during the site visits. There are varying degrees of bare ground within the uplands. Wetland creation will transform these upland areas into wetlands

that will self-vegetate over time with native hydrophytic species. There will be no net loss of functions.

FAUNA

The purpose of the proposed project is to enhance NLF habitat. The mitigation areas will develop into depressional wetlands adjacent to those existing to be utilized by the state-endangered NLF. Mitigation areas will likely be inhabited or utilized by a number of other wildlife species, as is the case with the existing wetlands. There will be an increase of wildlife functions and values within the mitigation areas as they become wetland habitat.

MITIGATION APPROACH

The proposed project has followed the preferred sequence of first avoiding, then minimizing, and finally compensating for wetland impacts. First, the project has been designed to avoid impacts to wetlands on-site. The NLF habitat enhancement project is currently proposing the construction of 26 berms within Units A and B. Wetland impacts were avoided through the limitation of the number of berms proposed while still allowing for sufficient protection of the NLF from serious predatory threats. Secondly, the project has minimized further potential impacts by the careful planning of the berm placement. Upland areas, existing fish berms, and narrow wetland areas were utilized wherever feasible for the proposed berm locations, thus minimizing impact to wetlands. Alternative options were considered in the place of berms including sheet piling and screening. However, sheet piling would not have a natural appearance and would be aesthetically unpleasing, have negative effects on waterfowl, possibly inhibit subsurface hydrology movement, and more importantly inhibit movement of the NLF while causing unnecessary destruction of sensitive habitat due to use of heavy machinery. In addition, a series of screens would not prevent the movement of fish eggs and bullfrog eggs/tadpoles into NLF habitat. Thirdly, to compensate for the direct wetland impacts that could not be avoided by berm placement, using wetland creation already proposed by the habitat enhancement project, 1.51 acres of Category II wetlands will be created adjacent to existing wetlands within Units A and B (0.72:1 ratio).

WETLAND CREATION FOR HABITAT ENHANCEMENT

Excavation within upland areas adjacent to existing Category II wetlands will provide habitat enhancement and mitigation for the direct wetland impacts within Units A and B. The goals of this Mitigation Plan are to: 1) create 0.37 acres (16,054 sq. ft.) of Category II wetland adjacent to the existing wetlands within Unit A; and 2) create 1.14 acres (49,863 sq. ft.) of Category II wetland adjacent to the existing wetlands within Unit B. There will be six wetland creation areas in Unit A within WSA 5, 6, and 7 and five wetland creation areas in Unit B with WSA 4, 6, and 8 (Appendix A, Sheets 12 and 13). The wetland creation areas will be natural in appearance with a gradual slope into uplands, thereby assisting in wildlife movement. The wetlands will be re-vegetated by natural distribution of plants.

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